NRC FORM 618
(8-2000)
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES

1 a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE		PAGES
9157	12	71-9157	USA/9157/B(U)-96	1	OF	3

2. PREAMBLE

a. This certificate is issued to certify that the package (packaging and contents) described in Item 5 below meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."

b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

a. ISSUED TO *(Name and Address)*

Industrial Nuclear Company
14320 Wicks Blvd.
San Leandro, CA 94577

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Industrial Nuclear Company application dated June 8, 1999, as supplemented.

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5.

(a) Packaging

(1) Model No.: IR-100

(2) Description

The Model No. IR-100 package is approximately 8.87 inches long, 4.5 inches wide, and 8.5 inches high. The radioactive material contents consist of iridium-192 in source assemblies that meet the requirements for special form material. The source assemblies are positioned within a zircalloy or titanium "S" tube within the IR-100. The "S" tube is surrounded by a shield assembly made of depleted uranium. The uranium shield assembly is encased in a stainless steel housing. The space between the uranium shield assembly and the stainless steel casing is filled with a rigid polyurethane foam. The maximum weight of the IR-100 exposure device is 53 pounds and the maximum shield weight is 38 pounds.

(3) Drawings

The packaging is constructed in accordance with Industrial Nuclear Company Drawing Nos.: IR 100-1A, Rev. 5 and IR 100-1B, Rev. 2.

(b) Contents

(1) Type and form of material

Iridium 192 as sealed sources that meet the requirements of special form radioactive material.

5. (b) Contents (continued)

(2) Maximum quantity of material per package

120 (output) curies

Output curies are determined in accordance with American National Standard N432-1980, "Radiological Safety for the Design and Construction of Apparatus for Gamma Radiography."

6. The source must be secured in the shielded position of the packaging by the shipping plug, source assembly lock, and lock cap. The shipping plug, source assembly lock, and lock cap used must be fabricated of materials capable of resisting a 1475°F fire environment for one-half hour and maintaining their positioning function. The ball stop of the source assembly lock must engage the locking device. The flexible cable of the source assembly and shipping plug must be of sufficient length and diameter to provide positive positioning of the source in the shielded position.

7. The name plate on the exposure device must be fabricated of materials capable of resisting the fire test of 10 CFR Part 71 and maintaining its legibility.

8. In addition to the requirements of Subpart G of 10 CFR Part 71:

(a) The package must meet the Acceptance Tests and Maintenance Program of Section 8 of the application; and

(b) Each package shall be operated and prepared for shipment in accordance with the operating procedures in accordance with Section 7 of the application.

9. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.

10. Revision No. 11 of this certificate may be used until June 30, 2008.

11. Expiration date: September 30, 2009.

REFERENCES

Industrial Nuclear Company application dated June 8, 1999.

Supplements dated: June 9, August 6 and September 14, 1999; October 24, 2003; August 20, 2004; and March 22, 2007.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Robert A. Nelson, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Date: June 21, 2007

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION REPORT
Docket No. 71-9157
Model No. IR-100 Package
Certificate of Compliance No. 9157
Revision No. 12

SUMMARY

By application dated March 22, 2007, Industrial Nuclear Co., Inc. (INC), submitted an amendment request for Certificate of Compliance No. 9157, for the Model No. IR-100 package. INC requested amendments for approval of a "-96" designation in the package identification number and an increase in the maximum weights of the package and its depleted uranium (DU) shield.

EVALUATION

By application dated March 22, 2007, INC requested approval for a "-96" designation for the IR-100 package. Changes to the package design are not required in order to meet the provisions for a "-96" designation. None of the changes indicated for a "-96" designation are applicable to the Model No. IR-100 package The package identification number has been revised to USA/9157/B(U)-96 to indicate that the package meets the requirements of the revised 10 CFR Part 71 regulations which became effective October 1, 2004 (69 FR 3698).

INC requested an amendment to increase the maximum weight of the Model No. IR-100 to 53 lbs and the maximum shield weight to 38 lbs. Full-scale tests were performed for the Model No. IR-100 exposure device to satisfy the lifting and tie-down devices, normal conditions of transport, and hypothetical accident conditions requirements of 10 CFR Part 71. The margin of safety in all tests were more than adequate. The additional increase of 3 lbs for the maximum weight of the package and 2 lbs for its DU shield, will not meaningfully affect the safety margins reported in the application. The requested changes were incorporated into Revision 5 of Drawing No. IR 100-1A. INC requested the changes as the result of having a new manufacturer produce shields with a 99.7% purity of DU. Additionally, as the DU shield molds get older and expand, the weight of the shield will increase to 38 lbs. Based on the statements and representations in the application, the staff concludes that the requested weight increases of the package and its DU shield will not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Condition No. 9 of the certificate was revised to minimize wording and for clarity. The certificate was also revised to include Condition No. 10, which authorizes the use of the previous revision of the certificate for a period of approximately 1 year from the date of issuance of the certificate.

CONCLUSION

As requested by the applicant the package identification number has been revised to include the "-96" designation. The Certificate of Compliance has also been revised to include the amendment requested by the applicant. Based on the statements and representations in the application, the staff concluded that the design has been adequately described and meets the requirements of 10 CFR Part 71 for a "-96" designation approval. The changes indicated in the amendment request do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9157, Revision No. 12 on June 21, 2007.